

Typification of some names in Epacridoideae (Ericaceae)

Darren M. Crayn^{1,4}, Kathleen A. Kron², Benjamin C. M. Potter³

¹*Australian Tropical Herbarium, James Cook University, McGregor Road, Smithfield QLD 4878, Australia*

²*Department of Biology, Wake Forest University, Winston-Salem NC 27109-7325, USA*

³*School of Biological Sciences, University of Auckland, Auckland 1010, New Zealand*

⁴*Author for correspondence: darren.crayn@jcu.edu.au, Tel: +61 (0)7 4232 1859*

Abstract

Several longstanding generic names in current use in the Epacridoideae (Ericaceae) are untypified: *Archeria* Hook.f., *Coleanthera* Stschechl., *Pentachondra* R.Br., and *Lysinema* R.Br. The typification of these names and of *Astroloma* R.Br., and *Epacris pumila* J.R.Forst. & G.Forst., the basionym of *Pentachondra pumila* (J.R.Forst. & G.Forst.) R.Br. is clarified. The use of the name Epacridoideae Arn. for the subfamily previously known as Styphelioideae (sensu Kron *et al.* 2002) is also briefly discussed based on changes to the International Code of Nomenclature.

Introduction

In undertaking a molecular phylogenetic study of the Ericaceae Durande, which aimed to sample the type species of each genus, we became aware that several generic names in current use in Ericaceae subfamily Epacridoideae are untypified, namely *Andersonia* R.Br., *Archeria* Hook.f., *Coleanthera* Stschechl., *Pentachondra* R.Br., and *Lysinema* R.Br. This paper clarifies the typification of all but the first (*Andersonia*) of these genera, of *Astroloma* R.Br., and of *Epacris pumila* J.R.Forst. & G.Forst., the basionym of *Pentachondra pumila* (J.R.Forst. & G.Forst.) R.Br. upon which *Pentachondra* is herein typified.

Typifications

Archeria Hook.f. *The botany of the Antarctic voyage of H.M. Discovery ships Erebus and Terror. III. Flora Tasmaniae* 1(4): 262, t. 80, 81 (1857)

Type (designated here): *A. hirtella* Hook.f.

Notes: *Archeria* comprises seven species in Tasmania and New Zealand (Allan 1961; Curtis 1963; Baker and de Salas 2013). Four of the five Tasmanian species (*A. eriocarpa* Hook.f., *A. hirtella* (Hook.f.) Hook.f., *A. minor* Hook.f. and *A. serpyllifolia* Hook.f.) were described by Hooker in 1857 (Hooker 1857), the two New Zealand species (*A. traversii* Hook.f. and *A. racemosa* Hook.f.) were described seven years later (Hooker 1864) and the fifth Tasmanian species (*A. comberi* Melville) nearly a century later (Melville 1957). Since *A. hirtella* was the first species to be described (as *Epacris hirtella* Hook.f. *London Journal of Botany* 6: 271, 1847) it is here selected as type of *Archeria*, thus also typifying Archerieae (Crayn and Quinn 1998).

Astroloma R.Br. *Prodromus Florae Novae Hollandiae*: 538 (1810)

Type (designated by Sleumer 1963: 146): *A. humifusum* (Cav.) R.Br.

Notes: *Astroloma* was erected by Brown (1810) for six species, one (*A. humifusum*) transferred from *Ventenatia* Cav. and five new (*A. compactum*, *A. denticulatum*, *A. pallidum*, *A. prostratum* and *A. tectum*). However, Brown did not designate a type for *Astroloma* R.Br. Sleumer (1963) followed Drude (1897) in reducing *Astroloma* to a section of *Styphelia* subgenus *Styphelia*; he formally lectotypified sect. *Astroloma* on *S. humifusa* (Cav.) Pers.

Recent work (e.g. Quinn *et al.* 2003; Johnson *et al.* 2012) has highlighted the polyphyly of the genus *Astroloma* and a significant re-arrangement of the species is pending.

Coleanthera Stsche gl. *Bulletin de la Société Impériale des Naturalistes de Moscou* 32(1): 4 (1859)

Type (designated here): *C. myrtoides* Stsche gl.

Notes: In erecting *Coleanthera*, Stsche gleew (1859) described two species: *C. myrtoides* and *C. virgata*. Bentham (1869) later transferred *Leucopogon coelophyllus* A.Cunn. ex DC. to the genus as *C. coelophylla* (A.Cunn. ex DC.) Benth. Since *C. virgata* is extinct (Australian Government 1999), *C. myrtoides* is here selected as the lectotype.

Pentachondra R.Br. *Prodromus Florae Novae Hollandiae*: 549 (1810)

Type (designated here): *P. pumila* (J.R.Forst. & G.Forst) R.Br.

Notes: *Pentachondra* R.Br. was erected for two species, *P. involucrata* R.Br. and *P. pumila* (J.R.Forst. & G.Forst.) R.Br. The latter species is widespread in southeastern Australian and New Zealand montane heaths, and is the obvious choice for the lectotype. However, the basionym, *Epacris pumila* J.R.Forst. & G.Forst., is untypified. In transferring *E. pumila* to *Pentachondra* Brown (1810) made reference to specimens in the herbarium of G. Forster in the Museum of D. Lambert. Nicholson and Fosberg (2004), having seen a range of material in European herbaria, considered typification of *E. pumila* in detail and suggested that UPS-THUNB 4331 (*J.R. Forster s.n.*) "... would make a good lectotype if one is needed." (p. 400). Here we formally lectotypify *E. pumila* J.R.Forst. & G.Forst. based on this *J.R. Forster* specimen, and thereby typify *P. pumila* (J.R.Forst. & G.Forst) R.Br. alike.

Epacris pumila J.R.Forst. & G.Forst *Characteres Generum Plantarum* Edn. 1: 10 (1775)

Lectotype (designated here): *J.R. Forster s.n.* (UPS-THUNB 4331), *fide* Nicholson and Fosberg, *The Forsters and the Botany of the Second Cook Expedition (1772-1775)*: 400 (2004)

Type citation: 'Nova Zelandia'

Lysinema R.Br. *Prodromus Florae Novae Hollandiae*: 552 (1810)

Type (designated here): *L. pentapetalum* R.Br.

Notes: Thiele (2009) reduced the circumscription of Brown's widespread *L. ciliatum* R.Br. to include only populations from the south coast region of Western Australia, and resurrected *L. pentapetalum* R.Br. (synonymized under *L. ciliatum* R.Br. by Bentham, 1869) for the widely distributed plants of *L. ciliatum sensu lato* occurring beyond the south coast region. Therefore, *L. pentapetalum* is the common, widespread *Lysinema* occurring throughout much of South-West province of Western Australia. There is good type material of this species in at least BM (holotype), P and S (K. Thiele pers. comm. 2014), and it was the first listed of the five described under *Lysinema* in the protologue (Brown 1810). For these reasons *L. pentapetalum* is the appropriate choice for the lectotype.

Notes on competing subfamily names Epacridoideae and Styphelioideae:

Kron *et al.* (2002) and most authors since have treated Epacridaceae R.Br. at subfamily rank within Ericaceae as Styphelioideae Sweet (1828, as Stypheliae), which had priority at that rank over Epacridoideae Link (1829, as Epacrideae). However, a recent change to the International Code of Nomenclature (Article 19.5 of the Melbourne Code; McNeill *et al.* 2012) mandates instead that priority rests with infrafamilial names based on conserved family names. Since Epacridaceae R.Br. is conserved, according to Reveal (2012), Epacridoideae Arn. (1832) is to be adopted over the earlier Styphelioideae Sweet (1809). Reveal (2011 onward) considers Link's Epacrideae (1829, treated by Kron *et al.* (2002) as a synonym of Styphelioideae) to be equivalent to a suborder and Arnott's Epacrideae (1832) to be equivalent to a subfamily. Thus the correct name for the subfamily that contains *Epacris* Cav. is Epacridoideae Arn.

Acknowledgments

We dedicate this paper to the memory of our dear friend and colleague Elizabeth Anne Brown, and thank the editors for the opportunity to contribute to this memorial issue of *Telopea*. Mike Hislop (PERTH), Kanchi Gandhi (HUH), Brendan Lepschi (CANB), Nicholas Turland (B) and Peter Wilson (NSW) provided useful comments on typification of *Astroloma*, Kevin Thiele (PERTH) on *Lysinema*, and Mike Hislop on *Coleanthera*. Two anonymous reviewers further improved the manuscript. This research was supported by the Australian Biological Resources Study through grant #208-75 to DMC and Elizabeth A. Brown.

References

- Allan HH (1961) *Flora of New Zealand*. Vol. 1. *Indigenous Tracheophyta - Psilopsida, Lycopsidea, Filicopsida, Gymnospermae, Dicotyledons*. (Government Printer: Wellington, New Zealand)
- Australian Government (1999) *Environmental Protection and Biodiversity Conservation Act*. (Australian Government: Canberra)
- Baker ML, de Salas MF (2013) *A Census of the Vascular Plants of Tasmania and Index to the Student's Flora of Tasmania and Flora of Tasmania Online*. (Tasmanian Herbarium: Hobart)
- Bentham G (1869) *Flora Australiensis*. (Reeve and Co.: London)
- Brown R (1810) *Prodromus Florae Novae Hollandiae*. (Richard Taylor: London)
- Crayn DM, Quinn CJ (1998) Archerieae: a new tribe in Epacridaceae. *Australian Systematic Botany* 11: 23–24 <http://dx.doi.org/10.1071/SB97002>
- Curtis WM (1963) *The Student's Flora of Tasmania*. (Government Printer: Hobart)
- Drude O (1897) *Epacridaceae*. Pp. 66–79 in Engler A, Prantl K (eds) *Die Natürlichen Pflanzenfamilien*. Vol. 4. (Engelmann: Leipzig)
- Hooker JD (1857) *Flora Tasmaniae*. (Reeve: London)
- Hooker JD (1864) *Handbook of the New Zealand Flora*. (Reeve and Co.: London)
- Johnson KA, Holland BR, Heslewood MM, Crayn DM (2012) Supermatrices, supertrees and serendipitous scaffolding: Inferring a well-resolved, genus-level phylogeny of Styphelioideae (Ericaceae) despite missing data. *Molecular Phylogenetics and Evolution* 62: 146–158 <http://dx.doi.org/10.1016/j.ympev.2011.09.011>
- Kron KA, Judd WS, Stevens PF, Crayn DM, Anderberg AA, Gadek PA, Quinn CJ, Luteyn JL (2002) Phylogenetic classification of Ericaceae: Molecular and morphological evidence. *Botanical Review* 68: 335–423 [http://dx.doi.org/10.1663/0006-8101\(2002\)068\[0335:PCOEMA\]2.0.CO;2](http://dx.doi.org/10.1663/0006-8101(2002)068[0335:PCOEMA]2.0.CO;2)
- McNeill J, Barrie FR, Buck WR, Demoulin V, Greuter W, Hawksworth DL, Herendeen PS, Knapp S, Marhold K, Prado J, Prud'homme van Reine WF, Smith GF, Wiersema JH, Turland N (2012) *International Code of Nomenclature for algae, fungi, and plants (Melbourne Code)*. (Koeltz Scientific Books: Koenigstein, Germany)
- Melville R (1957) Contributions to the Flora of Australia: IV. Comber's *Archeria* from Tasmania. *Kew Bulletin* 12: 389–390 <http://dx.doi.org/10.2307/4113699>
- Nicholson DH, Fosberg FR (2004) *The Forsters and the Botany of the Second Cook Expedition (1772–1775)*. (Gantner Verlag: Ruggell)
- Quinn CJ, Crayn DM, Heslewood MM, Brown EA, Gadek PA (2003) A molecular estimate of the phylogeny of Styphelieae (Ericaceae). *Australian Systematic Botany* 16: 581–594 <http://dx.doi.org/10.1071/SB03012>
- Reveal JL (2011 onward) *Indices Nominum Supragenericorum Plantarum Vascularium*. <http://www.plantsystematics.org/reveal/pbio/fam/allspgnames.html> (accessed 1 August 2014)
- Reveal JL (2012) Newly required infrafamilial names mandated by changes in the Code of Nomenclature for Algae, Fungi and Plants. *Phytoneuron* 2012–33: 1–32.
- Sleumer H (1963) Florae Malesianae praecursores XXXVII: materials towards the knowledge of the Epacridaceae mainly in Asia, Malaysia, and the Pacific. *Blumea* 12: 145–171
- Stschegleew SS (1859) Descriptio Epacridearum novarum. *Bulletin de la Société Impériale des Naturalistes de Moscou* 32: 20.
- Thiele KR (2009) A new circumscription for *Lysinema ciliatum* (Ericaceae: Styphelioideae: Epacrideae) and reinstatement of *L. pentapetalum*. *Nuytsia* 19: 265–275